

WHAT IS CLAIMED IS:

1. A molecule comprising a polypeptide having substantial homology with a CTL epitope selected from the group consisting of ADLMGYIPLV (Core₁₃₁₋₁₄₀; SEQ ID NO:1), LLALLSCLTV (Core₁₇₈₋₁₈₇; SEQ ID NO:2), QLRRHIDLLV (SEQ ID NO:55), LLCPAGHAV (NS3₁₁₆₉₋₁₁₇₇; SEQ ID NO:26), KLVALGINAV (NS3₁₄₀₆₋₁₄₁₅; SEQ ID NO:28), SLMAFTAAV (NS4₁₇₈₉₋₁₇₉₇; SEQ ID NO:34), LLFNILGGWV (NS4₁₈₀₇₋₁₈₁₆; SEQ ID NO:35), and ILDSFDPLV (NS5₂₂₅₂₋₂₂₆₀; SEQ ID NO:42).
2. The molecule of claim 1, wherein said molecule comprises at least about eight amino acids and less than about 50 amino acids.
3. The molecule of claim 2, wherein said molecule comprises at least about nine amino acids and less than about thirteen amino acids.
4. The molecule of claim 1, wherein said polypeptide is KLVALGINAV (NS3₁₄₀₆₋₁₄₁₅; SEQ ID NO:28) or substantially homologous thereto.
5. The molecule of claim 1, wherein said polypeptide is conjugated to a substance, wherein said substance is selected from the group consisting of a radiolabel, an enzyme, a fluorescent label, a solid matrix, a carrier, and a second CTL epitope.
6. The molecule of claim 5, wherein said substance is a second CTL epitope.
7. The molecule of claim 5, wherein said second epitope is a T helper epitope.

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8. The molecule of claim 5, wherein said carrier comprises an immunogenic lipid or protein.

9. The molecule of claim 5, wherein said polypeptide is conjugated to said substance indirectly by a linker.

10. A polypeptide having substantial homology with a CTL epitope selected from the group consisting of ADLMGYIPLV (Core₁₃₁₋₁₄₀; SEQ ID NO:1), LLALLSCLTV (Core₁₇₈₋₁₈₇; SEQ ID NO:2), QLRRHIDLLV (SEQ ID NO:55), LLCPAGHAV (NS3₁₁₆₉₋₁₁₇₇; SEQ ID NO:26), KLVALGINAV (NS3₁₄₀₆₋₁₄₁₅; SEQ ID NO:28), SLMAFTAAV (NS4₁₇₈₉₋₁₇₉₇; SEQ ID NO:34), LLFNILGGWV (NS4₁₈₀₇₋₁₈₁₆; SEQ ID NO:35), and ILDSFDPLV (NS5₂₂₅₂₋₂₂₆₀; SEQ ID NO:42).

11. The polypeptide of claim 10, wherein said polypeptide is KLVALGINAV (NS3₁₄₀₆₋₁₄₁₅; SEQ ID NO:28) or substantially homologous thereto.

12. A method of provoking an immune response to a hepatitis C viral antigen, comprising contacting a cytotoxic T lymphocyte with an immune response provoking amount of a molecule comprising a peptide selected from the group consisting of ADLMGYIPLV (Core₁₃₁₋₁₄₀; SEQ ID NO:1), LLALLSCLTV (Core₁₇₈₋₁₈₇; SEQ ID NO:2), QLRRHIDLLV (SEQ ID NO:55), LLCPAGHAV (NS3₁₁₆₉₋₁₁₇₇; SEQ ID NO:26), KLVALGINAV (NS3₁₄₀₆₋₁₄₁₅; SEQ ID NO:28), SLMAFTAAV (NS4₁₇₈₉₋₁₇₉₇; SEQ ID NO:34), LLFNILGGWV (NS4₁₈₀₇₋₁₈₁₆; SEQ ID NO:35), and ILDSFDPLV (NS5₂₂₅₂₋₂₂₆₀; SEQ ID NO:42).

13. The method of claim 12, wherein said contacting occurs in a mammal.

14. The method of claim 13, wherein said mammal is free of HCV disease, is a carrier of HCV, or is afflicted with HCV disease.

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15. The method of claim 12, wherein said contacting occurs in vitro.

16. The method of claim 15, wherein said method further comprises returning said contacted cytotoxic T cells to the host.

17. The method of claim 12, wherein said polypeptide is co-administered with a second polypeptide that induces a T helper response to HCV.

18. The method of claim 17, wherein said polypeptide and said T helper inducing polypeptide are conjugated to one another.

19. A method of detecting in lymphocytes of a mammal cytotoxic T cells that respond to a T cell epitope of hepatitis C virus, comprising the steps of:
 (a) contacting target cells with a molecule comprising at least one of the peptides selected from the group consisting of ADLMGYIPLV (Core₁₃₁₋₁₄₀; SEQ ID NO:1), LLALLSCLTV (Core₁₇₈₋₁₈₇; SEQ ID NO:2), QLRRHIDLLV (SEQ ID NO:55), LLCPAGHAV (NS3₁₁₆₉₋₁₁₇₇; SEQ ID NO:26), KLVALGINAV (NS3₁₄₀₆₋₁₄₁₅; SEQ ID NO:28), SLMAFTAAV (NS4₁₇₈₉₋₁₇₉₇; SEQ ID NO:34), LLFNILGGWV (NS4₁₈₀₇₋₁₈₁₆; SEQ ID NO:35), and ILDSFDPLV (NS5₂₂₅₂₋₂₂₆₀; SEQ ID NO:42), wherein said target cells are of the same HLA class as the lymphocytes to be tested for said cytotoxic T cells; (b) contacting said lymphocytes to be tested for said cytotoxic T cells with a molecule comprising at least one of the peptides selected from the peptides selected from the group consisting of ADLMGYIPLV (Core₁₃₁₋₁₄₀; SEQ ID NO:1), LLALLSCLTV (Core₁₇₈₋₁₈₇; SEQ ID NO:2), LLCPAGHAV (NS3₁₁₆₉₋₁₁₇₇; SEQ ID NO:26), KLVALGINAV (NS3₁₄₀₆₋₁₄₁₅; SEQ ID NO:28), SLMAFTAAV (NS4₁₇₈₉₋₁₇₉₇; SEQ ID NO:34), LLFNILGGWV (NS4₁₈₀₇₋₁₈₁₆; SEQ ID NO:35), and ILDSFDPLV (NS5₂₂₅₂₋₂₂₆₀; SEQ ID NO:42); and (c) determining whether said

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cells.

15 21) A pharmaceutical composition comprising a
polypeptide having substantial homology with a CTL
epitope selected from the group consisting of ADLMGYIPLV
(Core₁₃₁₋₁₄₀; SEQ ID NO:1), LLALLSCLTV (Core₁₇₈₋₁₈₇; SEQ ID
NO:2), QLRRHIDLLV (SEQ ID NO:55), LLCPAGHAV (NS3₁₁₆₉₋₁₁₇₇; SEQ
20 ID NO:26), KLVALGINAV (NS3₁₄₀₆₋₁₄₁₅; SEQ ID NO:28), SLMAFTAAV
(NS4₁₇₈₉₋₁₇₉₇; SEQ ID NO:34), LLFNILGGWV (NS4₁₈₀₇₋₁₈₁₆; SEQ ID
NO:35), and ILDSFDPLV (NS5₂₂₅₂₋₂₂₆₀; SEQ ID NO:42), and a
pharmaceutically acceptable carrier.

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